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ABSTRACT

The Food and Nutrition Service (FNS), within the Department of Agriculture (USDA), is responsible for administering the National School Lunch Program (NSLP). Under the provisions of the program, states are reimbursed a set amount of money for each meal served under the program. In 1991 and 1992, the FNS published the results of a survey of a sample of state and local school officials to obtain information on the cost of meals. Overall, the findings suggested that the level of federal reimbursement was roughly equivalent to the national average cost to produce the meal. This document discusses: (1) a General Accounting Office review of the FNS study; (2) the ability of state food authorities (SFAs) to produce meals at or below the reimbursement rate for free meals; (3) differences in meal production costs among regions; and (4) the appropriateness of the index used by the FNS--the Food Away from Home Series--to adjust reimbursement rates. Findings verify FNS' conclusion that the federal reimbursement rate for a free meal was roughly equivalent to the national average cost to produce the meal. It is estimated that between 65 and 83 percent of the SFAs were able to produce meals at or below the amount received from two federal sources of aid. During the 1988-89 school year, reported costs were higher in the Northeast and West. Finally, the Food Away from Home Series appears to be a reasonable index. Eighteen tables and 24 figures are included. (LMI)

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United States General Accounting Office

GAO

Briefing Report to Congressional Requesters

December 1993

FOOD ASSISTANCE

Information on Meal Costs in the National School Lunch Program

ED 364 975

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United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-254453

December 1, 1993

The Honorable William D. Ford
Chairman
The Honorable William F. Goodling
Ranking Minority Member
Committee on Education and Labor
House of Representatives

The Honorable Dale E. Kildee
Chairman, Subcommittee on Elementary,
Secondary, and Vocational Education
Committee on Education and Labor
House of Representatives

On an average school day, an estimated 25 million children at over 93,000 locations nationwide receive meals through the National School Lunch Program (NSLP). About 95 percent of all public schools and about 22 percent of all private schools participate in the NSLP, one of the oldest and largest federal child nutrition programs in the country. In fiscal year 1993, federal funding was about $4.7 billion.

The Food and Nutrition Service (FNS), within the U.S. Department of Agriculture (USDA), is responsible for administering the NSLP. Under the provisions of the program, states are reimbursed a set amount of money for each meal served under the program—in 1993, the rate was about $0.30 for each meal. The program also provides that children from families that fall below certain income levels receive meals free or at a reduced cost. The reimbursement for these meals is higher—in 1993, the reimbursement rate for a free meal was $1.84 and for a reduced-price meal, $1.44.[1] States distribute the federal funds to local school food authorities (SFA) to help cover the cost of providing school lunches, including expenses for food, labor, and other items.

In 1991 and 1992, FNS published the results of a survey of a sample of state and local school officials to obtain information on the cost of meals. This study, which was conducted by a private research firm, covered school years (SY) 1987-88 and 1988-89.[2] Overall, the results suggested that, on

[1]A portion of the government's payment is in the form of food commodities. The 1993 reimbursement rates included 14 cents' worth of commodities.

[2]Child Nutrition Program Operations Study: First Year Report and Child Nutrition Program Operations Study: Second Year Report, USDA, FNS, Office of Analysis and Evaluation (1991, 1992).

average, the level of federal reimbursement paid to schools for each free meal they served was roughly equivalent to the national average cost to produce the meal.

You requested detailed information on costs under the NSLP to assist you in preparation for upcoming reauthorization hearings. In response to your request, this briefing report discusses (1) our review of FNS' study, (2) the ability of SFAs to produce meals at or below the reimbursement rate for free meals, (3) differences in meal production costs among regions, and (4) the appropriateness of the index FNS uses—the Food Away From Home Series of the Consumer Price Index—to adjust reimbursement rates.

In summary, we found the following:

- FNS' conclusion that the federal reimbursement rate for a free meal was roughly equivalent to the national average cost to produce the meal seems appropriate. Our analyses showed that the small differences between the reimbursement rate and the cost reported by the SFAs included in the sample were not statistically significant. According to FNS' estimates, in SY 1987-88 the reimbursement rate for a free meal—at $1.60—was $0.02 lower than the national average cost to produce the meal, and in SY 1988-89 the rate—at $1.66—was $0.01 lower than the production cost. These slight differences between the rate and the production cost may not be real differences at all, but rather differences attributable to sampling errors.[3] It should be noted that the reimbursement for both of these school years includes 8 cents' worth of "bonus" commodities, which are in addition to the "entitlement" commodities included in the reimbursement. Bonus commodities and entitlement commodities are available from surplus stocks purchased by USDA under its agricultural price support programs. However, the availability of bonus commodities, unlike entitlement commodities, is not guaranteed to schools, and the value of bonus commodities can vary from year to year.
- For the 2 school years studied, on a national basis, between 58 and 80 percent of the SFAs were able to produce meals at or below the reimbursement rate for free meals. Moreover, if federally required state funding is added to the federal contribution, we estimate that between 65 and 83 percent of the SFAs were able to produce meals at or below the amount received from both sources.
- Among the regions of the country, statistically significant differences in meal production costs occurred for the 1988-89 school year. For that year,

[3]Sampling errors indicate how closely the results obtained from surveying a sample of SFAs reflect the results that would have been obtained from surveying all SFAs.

both the Northeast and West reported higher costs—averaging $1.86 and $1.78, respectively—than the South—at $1.58—mostly because of higher labor costs. We found no statistically significant variations for the 1987-88 school year.

- Finally, the Food Away From Home Series appears to be a reasonable index to use in adjusting the federal level of reimbursement.

This letter summarizes our briefing to you on July 20, 1993, and the accompanying sections provide a more detailed discussion of our findings. Section 1 examines FNS' study and compares the cost of producing a school lunch with the federal reimbursement rate for a free meal provided under the NSLP. Sections 2 and 3 provide our analysis of the variations among regions' costs to produce a school lunch, and section 4 provides information on using the Food Away From Home Series of the Consumer Price Index to adjust the federal reimbursement rates. Additional historical information on participation in and funding levels for the NSLP is included in section 5.

We began our work by reviewing the data gathered to produce FNS' two reports examining the cost of producing a school lunch in SY 1987-88 and 1988-89. These data were the most recent nationwide data available. We reviewed FNS' methodology and estimates and calculated sampling errors for the estimates. To develop regional analyses, we divided the data across the four Census Bureau regions—the Northeast, Midwest, South, and West. To determine the factors that contributed to regional variations in the cost of producing a lunch, we examined how the components of that cost—namely, food, labor, and other costs[4]—varied across the regions. In assessing the index FNS uses to adjust the level of federal reimbursement, we considered the foods included in calculating the index and compared this index with three other similar ones. We also discussed the strengths and weaknesses of these indexes with FNS and Bureau of Labor Statistics officials and an academic expert.

Several factors are important in understanding our estimates. FNS' data were (1) collected using a sophisticated sampling technique, (2) collected from a sample of SFAs designed to be nationally representative (rather than regionally), (3) obtained through telephone interviews and questionnaires rather than on-site observation, (4) estimated from the total expenditures for all meals rather than being strictly the production costs for just those

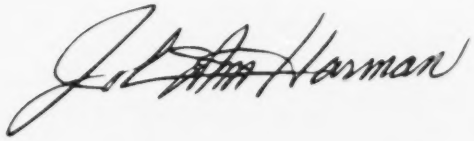
[4]FNS' study defines other costs as expenses for such things as eating utensils, food storage, utilities, maintenance of the food service area, and administrative functions.

meals served under the NSLP, and (5) adjusted using several weighting and modeling techniques. While we judged FNS' methodology to be reasonable, the results are estimates that may not precisely reflect actual costs. Since we relied on FNS' data, the same is true for our results. Furthermore, since FNS' sampling was designed to provide national rather than regional estimates, our estimates for regions generr are accompanied by larger sampling errors. Finally, at this point in time, the data are several years old. While we recognized these limitations in FNS' data, these data nevertheless were the most recent and comprehensive available for our review. Section 6 of this briefing report provides detailed information on the scope and methodology of our analysis.

We discussed our methodology and the factual content of this briefing report with FNS and private research officials, who agreed with our conclusions in comparing the national average cost to produce a school lunch and the federal reimbursement rate. However, FNS, in commenting on a draft of this report, questioned the credibility of our regional analyses basically because the agency's study had not been designed to provide regional estimates. This same concern was raised by the FNS contractor that performed the studies. In the preceding paragraph, we have recognized this concern and presented other limitations that should be taken into consideration in reviewing our analyses. In addition, FNS stated that for a national program such as the NSLP, it has been more interested in providing a reimbursement rate that reflects the national average cost of producing a meal rather than developing regional reimbursement rates.

We conducted our review between September 1992 and November 1993 in accordance with generally accepted government auditing standards.

We are sending copies of this briefing report to the Secretary of Agriculture and other interested parties, and copies will be available to others upon request. Please call me at (202) 512-5138 if you or your staff have any questions. Major contributors to this briefing report are listed in appendix I.



John W. Harman
Director, Food and
Agriculture Issues

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Abbreviations

BLS	Bureau of Labor Statistics
CPI	Consumer Price Index
FNS	Food and Nutrition Service
GAO	General Accounting Office
NSLP	National School Lunch Program
pps	probability proportional to size
psu	primary sampling unit
SFA	school food authority
SY	school year
USDA	U.S. Department of Agriculture

Comparison of the Federal Reimbursement Rate and National and Regional Costs to Produce a School Lunch

The Food and Nutrition Service (FNS), within the U.S. Department of Agriculture (USDA), reported that in school years (SY) 1987-88 and 1988-89, the reimbursement rate for a meal under the National School Lunch Program (NSLP) was roughly equivalent to the national average cost for producing the meal, as estimated by school food authorities (SFA). Our analysis of the data used for FNS' study, which was conducted by a private research firm, confirmed the study's nationwide estimates. Furthermore, using FNS' assumptions, our analysis comparing the costs of producing a school lunch in the four U.S. Bureau of Census regions—the Northeast, Midwest, South, and West—to the reimbursement rate indicated that the costs in the four regions were also roughly equivalent to the rate with one exception. For the second school year reviewed, we noted that the estimated cost in the South, $1.58, was less than the federal reimbursement rate of $1.66.

In addition, we estimate between 58 and 80 percent of the SFAs reported meal costs that were at or below the federal reimbursement rate for the 2 school years studied. SFAs that incurred costs above the reimbursement rate were found in each of the four Census regions; however, our analysis of the data showed that there were a higher percentage of SFAs above the reimbursement rate in the Northeast than in the South during both school years studied. Furthermore, we estimate that between 65 and 83 percent of SFAs had their costs covered by combining federal funding under the NSLP and state funding.

National Average Cost Compared to the Reimbursement Rate

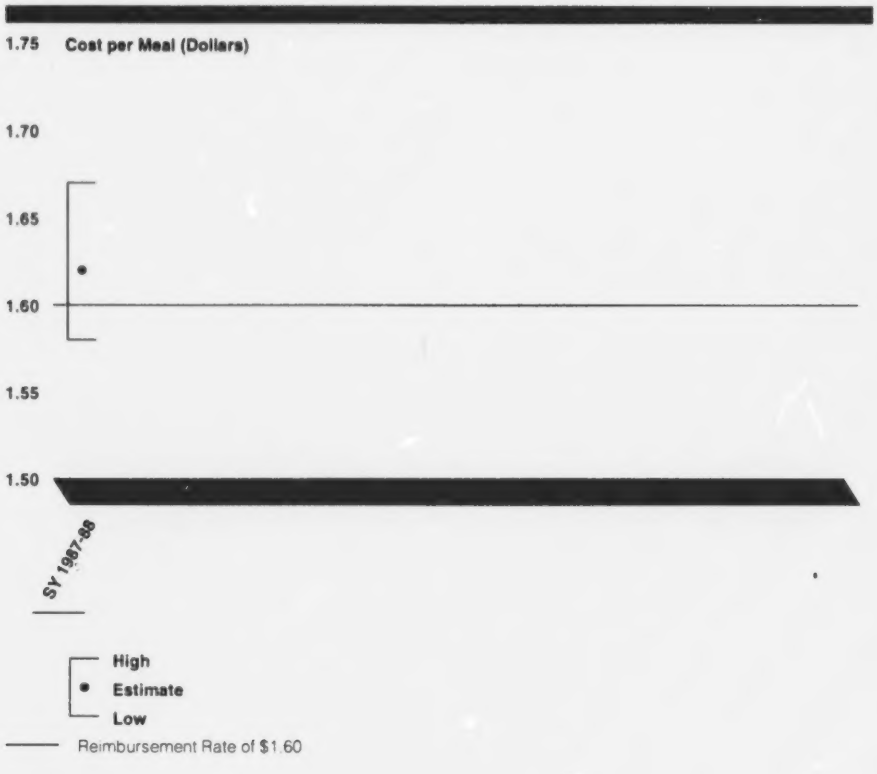
FNS' study found that the national average cost to produce a meal for the NSLP was roughly equivalent to the federal reimbursement rate. FNS estimated that in SY 1987-88, the national average cost was $1.62, which exceeded the reimbursement rate by $0.02 per meal. In SY 1988-89, the national average cost of $1.67 exceeded the reimbursement rate by $0.01 per meal.

When using sampling techniques, there is always the possibility that the sample may not accurately represent the universe from which it is drawn. Estimates developed from the sample are generally given with a range expressing the sampling error and a probability (termed a confidence interval), normally 95 percent. This range means that in 95 out of 100 instances, the sampling procedure used would produce a confidence interval containing the universe value that is being estimated. Since FNS did not publish the sampling errors and the confidence intervals associated with its estimates, we calculated them as part of our review.

Using FNS' data, we found that the SY 1987-88 estimate of $1.62 has an associated sampling error of $0.05, at the 95-percent confidence level. In other words, we estimate that the actual cost was between $1.57 and $1.67. The $1.60 reimbursement rate falls within this range. For SY 1988-89, the same situation occurs; the sampling error associated with the cost estimate of $1.67 is $0.07. This defines a cost range of $1.60 to $1.74, which encompasses the reimbursement rate of $1.66 for that school year. For the 1987-88 school year, the $1.60 reimbursement rate included $1.40 in cash, 12 cents' worth of commodities to which SFAs were entitled under the NSLP, and an additional 8 cents' worth of bonus commodities. For the 1988-89 school year, the $1.66 reimbursement rate included $1.46 in cash, 12 cents' worth of entitlement commodities, and an additional 8 cents' worth of bonus commodities. Bonus commodities and entitlement commodities are available from surplus stocks purchased by USDA under its agricultural price support programs. However, unlike entitlement commodities, bonus commodities are not guaranteed to schools, and the value of bonus commodities can vary from year to year.

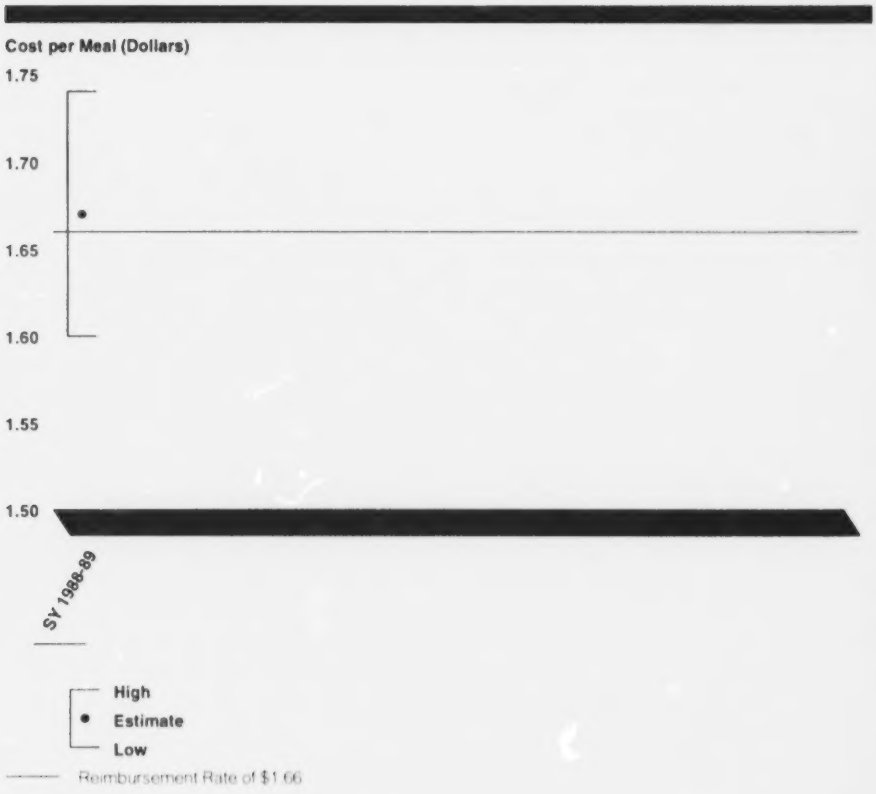
Even though FNS, in comparing meal costs and the reimbursement rate, found a $0.02 difference in SY 1987-88 and a $0.01 difference in SY 1988-89, these differences may be attributable to sampling errors. Figures 1.1 and 1.2 along with table 1.1 show the range of error associated with FNS' estimates of the cost to produce a school lunch and the federal reimbursement rate for SY 1987-88 and 1988-89.

Figure 1.1: National Average Cost to Produce a School Lunch Compared to the Federal Reimbursement Rate, SY 1987-88



Note: The range accounts for the sampling error associated with FNS' estimate.

Figure 1.2: National Average Cost to Produce a School Lunch Compared to the Federal Reimbursement Rate, SY 1988-89



Note: The range accounts for the sampling error associated with FNS' estimate.

Table 1.1: National Average Cost to Produce a School Lunch, SY 1987-88 and 1988-89

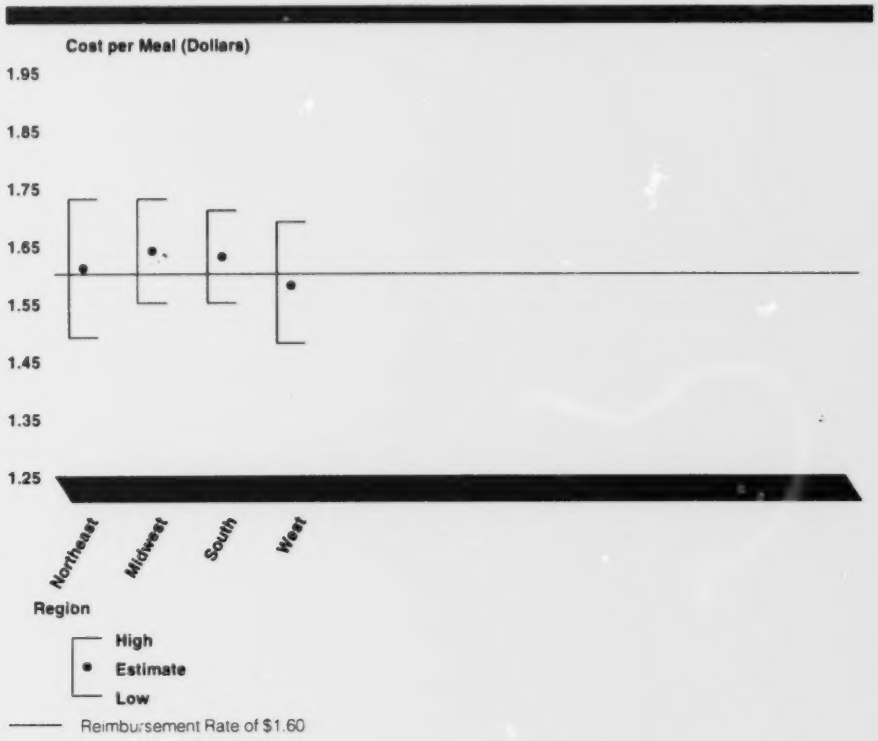
School year	Average cost	Sampling error at 95-percent level	Confidence interval
1987-88	$1.62	±$0.05	$1.57-$1.67
1988-89	$1.67	±$0.07	$1.60-$1.74

Regional Costs to Produce a Meal Compared to the Reimbursement Rate

As with national average costs, our estimates (with sampling errors) of the average costs in different regions did not reveal a significant difference between these costs and the reimbursement rate with one exception—estimated costs in the South were less than the reimbursement rate of $1.66 in SY 1988-89. In other words, in general we found the average cost for each region roughly equivalent to the reimbursement rate.

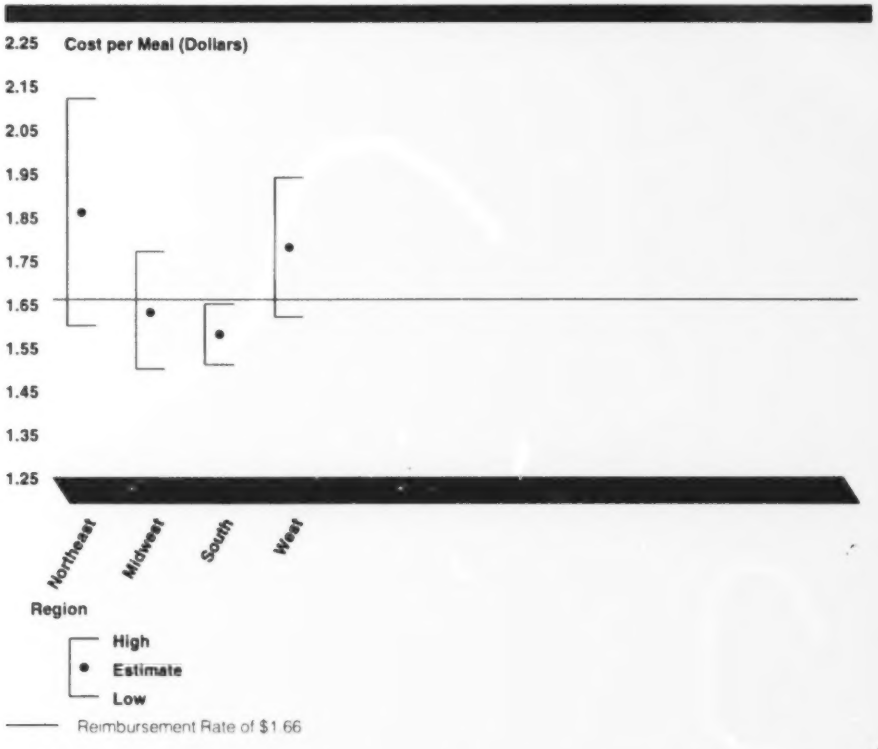
Figures 1.3 and 1.4 show our estimates of the average costs to produce a school lunch in the different regions of the country and the level of federal reimbursement for SY 1987-88 and 1988-89, respectively.

Figure 1.3: Regions' Average Costs to Produce a School Lunch Compared to the Federal Reimbursement Rate, SY 1987-88



Note: The ranges account for the sampling errors associated with our estimates.

Figure 1.4: Regions' Average Costs to Produce a School Lunch Compared to the Federal Reimbursement Rate, SY 1988-89



Note: The ranges account for the sampling errors associated with our estimates.

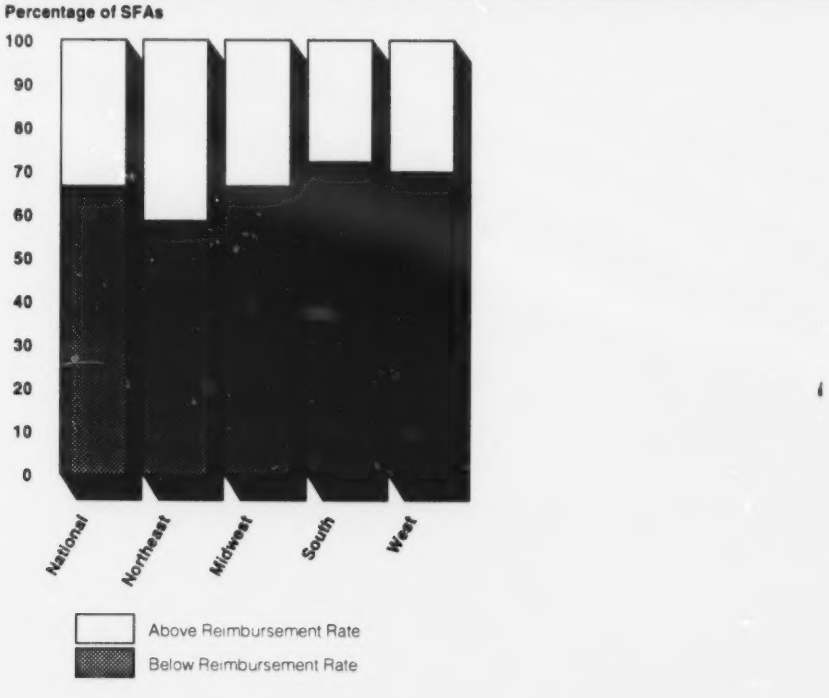
Percentage of SFAs Incurring Costs at or Below the Reimbursement Rate

In addition to analyzing average regional costs, we compared individual SFAs' costs with the reimbursement rate. In our analysis, we found that, on a national basis, between 58 and 80 percent of the SFAs incurred meal costs that were at or below the reimbursement rate for both years.

As shown in figures 1.5 and 1.6, the SFAs with costs above the reimbursement rate were distributed across the four Census regions. In making comparisons between regions of the percentage of SFA's above the reimbursement rate, the only statistically significant differences we found were between the Northeast and the South. Our estimates showed that in both school years studied, the Northeast region had a higher percentage of SFAs with costs above the reimbursement rate than the South. We cannot tell if there was a difference between the Northeast and the other two regions for these two school years—or among any of the other three

regions—because of the sampling errors associated with the estimates. Tables 1.2 and 1.3, show the percentage of SFAs with costs that were below the reimbursement rate for SY 1987-88 and 1988-89.

Figure 1.5: SFAs With Costs Above and SFAs With Costs Below the Reimbursement Rate, SY 1987-88



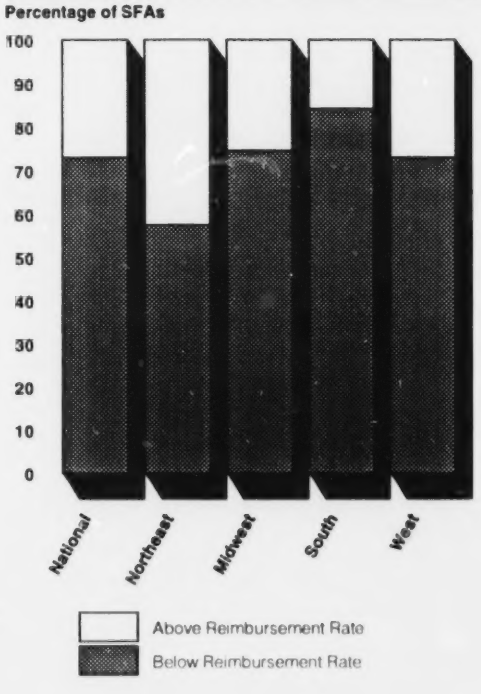
Note: Fig. does not account for sampling errors. Sampling errors can be found in table 1.2.

Table 1.2: SFAs With Costs at or Below the Reimbursement Rate, SY 1987-88

	Percentage at or below	Sampling error at 95-percent level	Confidence interval[a]
National	66	±8	58-75
Northeast	58	±10	48-69
Midwest	66	±17	50-83
South	72	±8	64-80
West	70	±11	59-80

[a]Because of rounding, the confidence intervals sometimes do not equal the estimate plus or minus the sampling error.

Figure 1.6: SFAs With Costs Above and SFAs With Costs Below the Reimbursement Rate, SY 1988-89



Note: Fig. does not account for sampling errors. Sampling errors can be found in table 1.3.

Table 1.3: SFAs With Costs at or Below the Reimbursement Rate, SY 1988-89

	Percentage at or below	Sampling error at 95-percent level	Confidence interval[a]
National	73	±7	66-80
Northeast	57	±12	45-70
Midwest	75	±13	61-88
South	84	±7	77-91
West	73	±10	63-83

[a]Because of rounding, the confidence intervals sometimes do not equal the estimate plus or minus the sampling error.

These analyses are based on the assumption that SFAs receive no more funding than the federal reimbursement (including both entitlement and bonus commodities) for the meals served. However, states are also required under the NSLP's regulations (7 C.F.R. 210.17) to contribute to the

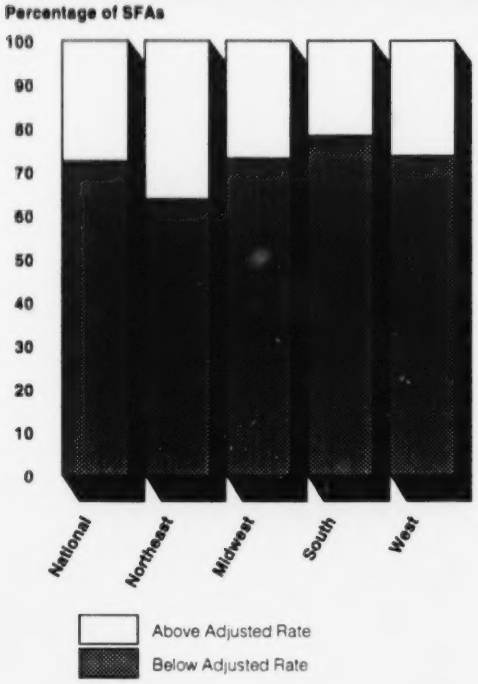
program. The regulations require states to contribute an amount not less than 30 percent of their section 4 funds—moneys that SFAs receive for all meals served under the NSLP whether they are provided free, provided at a reduced price, or paid for by the students. These funds are based on the section 4 reimbursement rate that was in effect on July 1, 1980: $0.185 per meal. Therefore, SFAs could receive as much as $0.055 per meal ($0.185 x 30% = $0.0555) in state matching funds.[5]

For our analysis, we assumed that SFAs received an additional $0.05 in state contributions toward the cost of each meal. Added to the federal reimbursement rate, this would increase the level of reimbursement to about $1.65 for SY 1987-88 and about $1.71 for SY 1988-89. Our analysis showed that this additional funding increased the percentage of SFAs whose average costs were covered by the amount of reimbursement they received for each meal to between 65 and 83 percent. This analysis also showed that for both school years studied, the Northeast still had a higher percentage of SFAs with costs exceeding the reimbursement rate than the South. In addition, we found that for SY 1988-89, (1) the Northeast also had a higher percentage of SFAs with costs exceeding the reimbursement rate than the Midwest and (2) the West had a higher percentage than the South.

Figures 1.7 and 1.8, along with tables 1.4 and 1.5, show the percentage of SFAs with costs above this adjusted reimbursement rate and the percentage with costs below this rate.

[5]The NSLP's regulations allow states with per capita incomes less than the national average to contribute less. These matching funds may be in the form of cash or in-kind contributions of equivalent value.

Figure 1.7: SFAs With Costs Above and SFAs With Costs Below the Adjusted Reimbursement Rate, SY 1987-88



Notes: Fig. does not account for sampling errors. Sampling errors can be found in table 1.4.

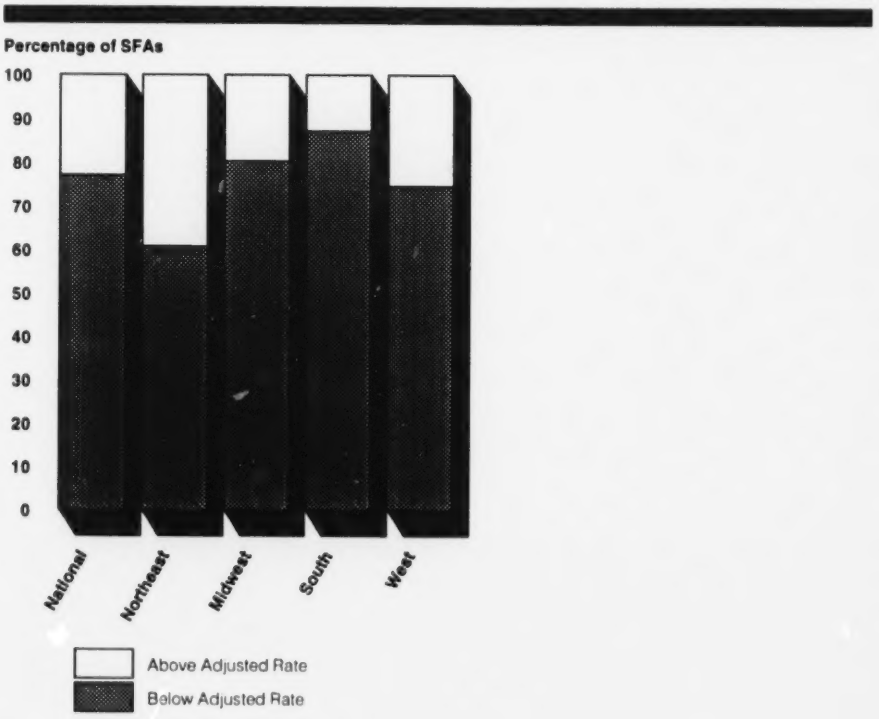
The adjusted reimbursement rate is $1.65.

Table 1.4: Percentage of SFAs With Costs at or Below All Sources of Reimbursement, SY 1987-88

	Percentage at or below	Sampling error at 95-percent level	Confidence interval[a]
National	72	±7	65-80
Northeast	64	±10	53-74
Midwest	73	±14	59-87
South	78	±8	71-86
West	74	±11	62-85

[a]Because of rounding, the confidence intervals sometimes do not equal the estimate plus or minus the sampling error.

Figure 1.8: SFAs With Costs Above and SFAs With Costs Below the Adjusted Reimbursement Rate, SY 1988-89



Notes: Fig. does not account for sampling errors. Sampling errors can be found in table 1.5.

The adjusted reimbursement rate is $1.71.

Table 1.5: Percentage of SFAs With Costs at or Below All Sources of Reimbursement, SY 1988-89

	Percentage at or below	Sampling error at 95-percent level	Confidence interval[a]
National	77	±6	71-83
Northeast	61	±12	49-72
Midwest	80	±10	70-90
South	87	±7	80-94
West	75	±9	65-84

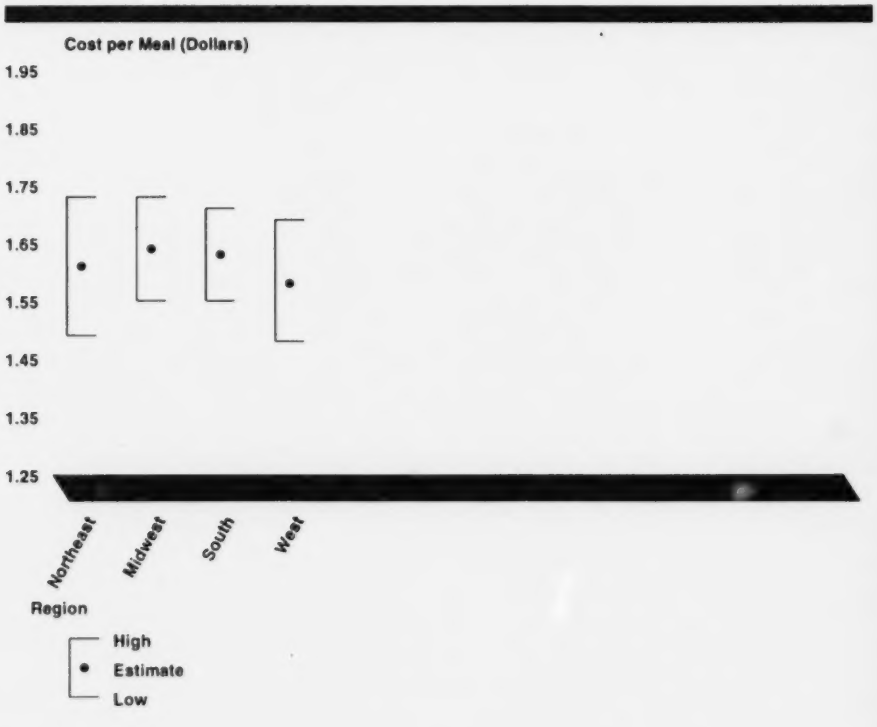
[a]Because of rounding, the confidence intervals sometimes do not equal the estimate plus or minus the sampling error.

Variations in Meal Costs Among Regions

We analyzed the variations in the four Census regions' average costs to produce a meal to determine if any region's cost was significantly higher or lower than any other region's. The SY 1988-89 data showed two statistically significant variations—no variations were noted in SY 1987-88. The SY 1988-89 data showed that both the Northeast and West incurred costs higher than the South.

In order to determine how meal costs varied among geographic regions, it was necessary to compute estimates of regional production costs for the four Census Bureau regions—the Northeast, Midwest, South, and West—and the sampling errors associated with these estimates. Figures 2.1 and 2.2, along with tables 2.1 and 2.2, summarize these estimates and sampling errors.

Figure 2.1: Regions' Average Costs to Produce a School Lunch, SY 1987-88

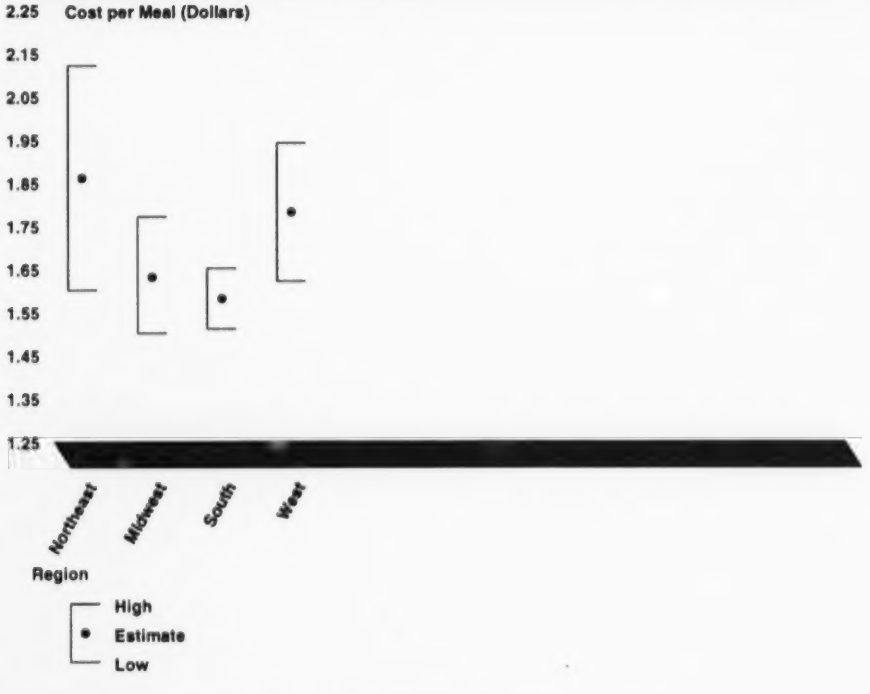


Note: The ranges account for the sampling errors associated with our estimates.

Table 2.1: Regions' Average Costs to Produce a School Lunch, SY 1987-88

Region	Average cost	Sampling error at 95-percent level	Confidence interval
Northeast	$1.61	±$0.12	$1.49-$1.73
Midwest	$1.64	±$0.09	$1.55-$1.73
South	$1.63	±$0.08	$1.55-$1.71
West	$1.58	±$0.11	$1.48-$1.69

Figure 2.2: Regions' Average Costs to Produce a School Lunch, SY 1988-89



Note: The ranges account for the sampling errors associated with our estimates.

Table 2.2: Regions' Average Costs to Produce a School Lunch, SY 1988-89

Region	Average cost	Sampling error at 95-percent level	Confidence interval
Northeast	$1.86	±$0.26	$1.60-$2.12
Midwest	$1.63	±$0.14	$1.50-$1.77
South	$1.58	±$0.07	$1.51-$1.65
West	$1.78	±$0.16	$1.62-$1.94

Because FNS' data were collected to make national estimates, rather than regional, the sampling errors associated with our regional estimates are generally larger than the errors associated with FNS' national estimates. Because of the larger sampling errors, we performed an additional statistical test to determine if there were statistically significant differences among regions' costs. On the basis of this test, we found that for SY 1988-89, production costs were higher in the Northeast and West than in the South.

Variations in the Cost of Production Factors Among Regions

Our analysis of FNS' data showed that the expenses that constitute meal costs—food, labor, and other costs—varied significantly among certain geographic regions for SY 1988-89.[6] We did not identify any significant variations in average costs during SY 1987-88. The SY 1988-89 data showed the following significant variations:

- food costs were higher in the Northeast than in the South;
- labor costs were higher in the Northeast and West than in the South and Midwest; and
- other costs were higher in the West than in the Northeast and South.

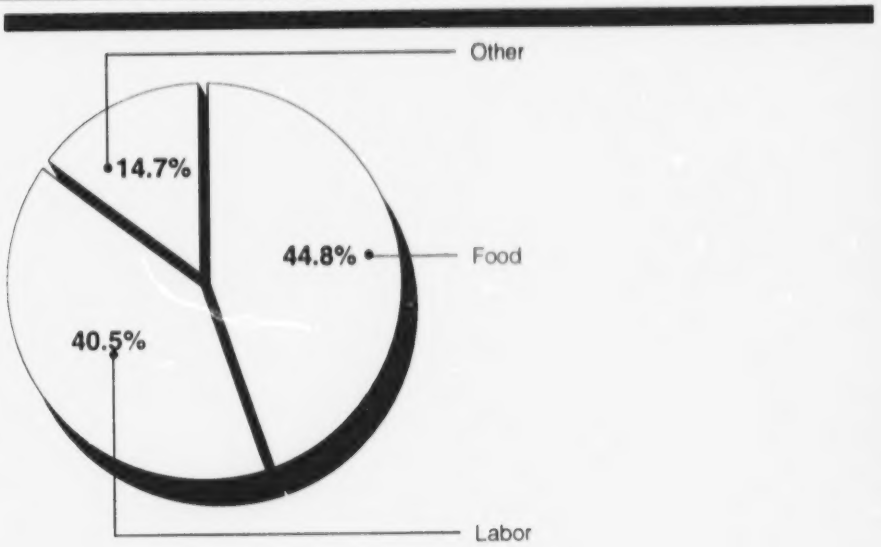
All in all, meal costs were higher in the Northeast and West than in the South mostly because of higher labor costs.

National Estimates of the Cost of Production Factors

In addition to estimating the average cost for producing a meal, FNS also defined and examined the factors that make up this total cost—food, labor, and other costs. FNS' study showed that food costs were the largest component of meal costs—45 percent in SY 1987-88 and 48 percent in SY 1988-89. Labor costs were the second largest—41 percent in both SY 1987-88 and 1988-89. Other costs constituted the smallest proportion of meal costs—15 percent in SY 1987-88 and 11 percent in SY 1988-89. Figures 3.1 and 3.2 show how meal costs comprised these individual costs in SY 1987-88 and 1988-89, respectively.

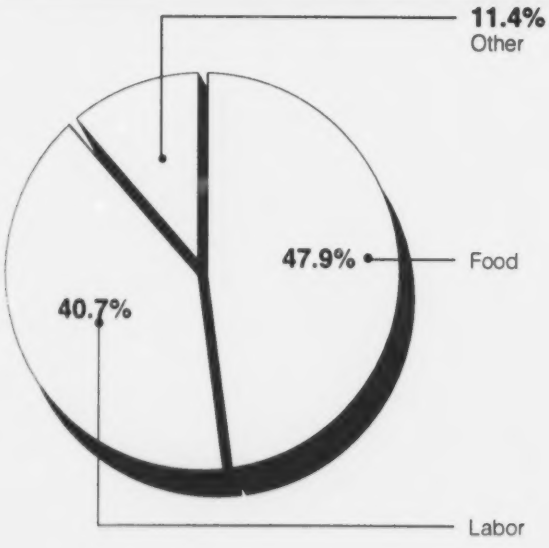
[6]Other costs include costs directly associated with producing a meal—for instance, the costs of utensils and storage—and costs not directly associated with production—for instance, expenses for administrative time and utilities.

Figure 3.1: Components of the Cost of Producing a School Lunch, SY 1987-88



Note: Fig. does not account for the sampling errors associated with the estimates. Sampling errors can be found in table 3.1.

Figure 3.2: Components of the Cost of Producing a School Lunch, SY 1988-89



Note: Fig. does not account for the sampling errors associated with the estimates. Sampling errors can be found in table 3.2.

FNS did not publish the sampling errors associated with its estimates of the cost of these components. For the purposes of comparison, we computed the sampling errors associated with the estimates, which are summarized in tables 3.1 and 3.2.

Table 3.1: National Estimates of the Components of the Cost of Producing a School Lunch, SY 1987-88

Factor	Average cost	Sampling error at 95-percent level	Confidence interval
Food	$0.73	±$0.02	$0.71-$0.75
Labor	$0.66	±$0.03	$0.63-$0.69
Other	$0.24	±$0.03	$0.21-$0.27

Table 3.2: National Estimates of the Components of the Cost of Producing a School Lunch, SY 1988-89

Factor	Average cost	Sampling error at 95-percent level	Confidence interval
Food	$0.80	±$0.04	$0.76-$0.84
Labor	$0.68	±$0.04	$0.65-$0.72
Other	$0.19	±$0.02	$0.17-$0.20

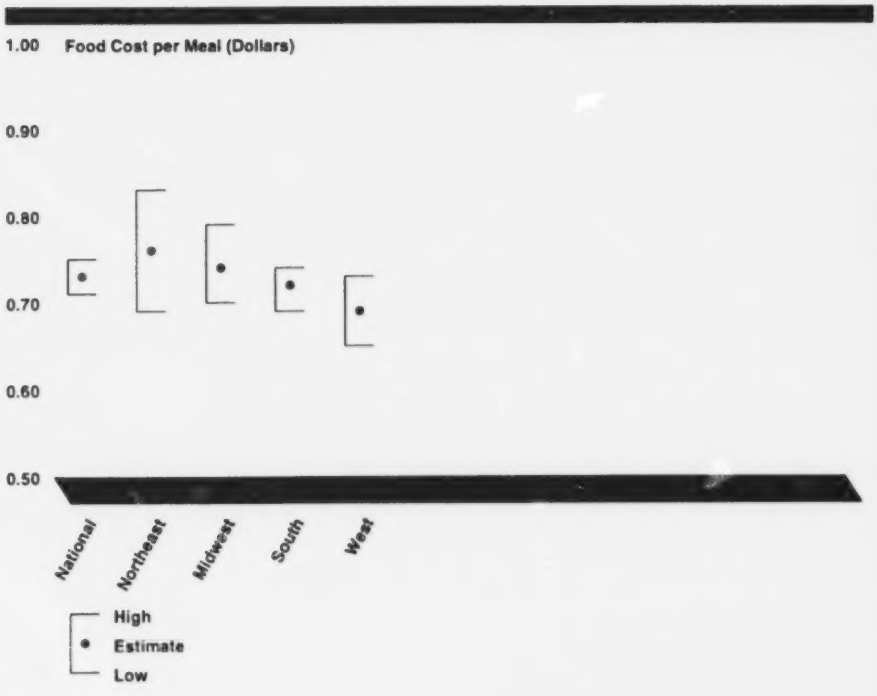
Regional Variations in the Cost of Production Factors

We used the same factors of production that FNS used to analyze variations in meal costs among geographic regions. We computed estimates of the cost of these factors in the four Census Bureau regions and the associated sampling errors. As discussed below, we found statistically significant variations among certain regions in the cost of all three production factors.

Variations in Food Costs

In examining the variations in food costs among regions, we found only one statistically significant difference: Costs were higher in the Northeast than in the South in SY 1988-89 (see fig. 3.4 and table 3.4). Although figure 3.4 indicates an overlap in the confidence intervals associated with the estimates for the Northeast and South, additional statistical tests indicated a statistically significant difference.

Figure 3.3: Food Cost Estimates, SY 1987-88

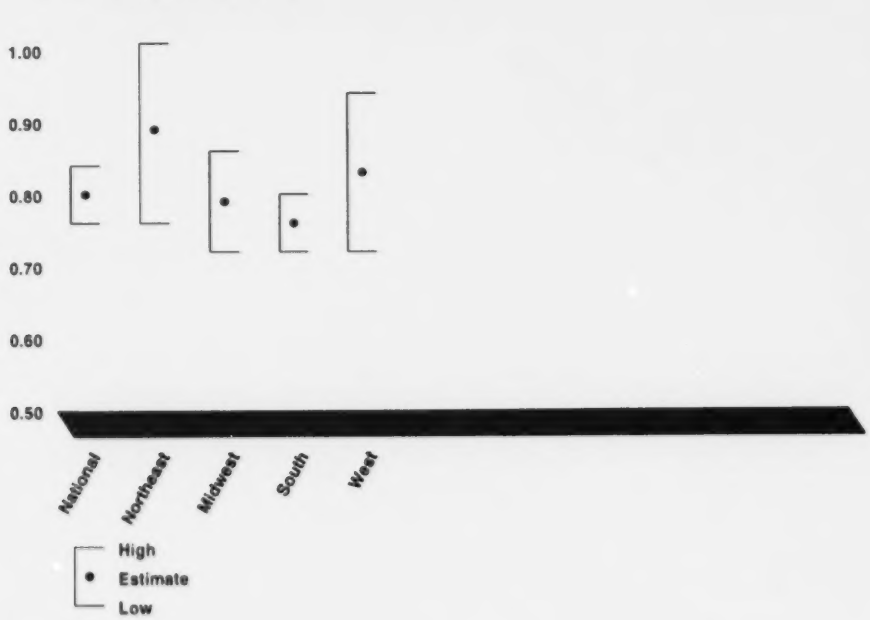


Note: The ranges account for the sampling errors associated with our estimates.

Table 3.3: Food Cost Estimates, SY 1987-88

	Average cost	Sampling error at 95-percent level	Confidence interval
National	$0.73	±$0.02	$0.71-$0.75
Northeast	$0.76	±$0.07	$0.69-$0.83
Midwest	$0.74	±$0.04	$0.70-$0.79
South	$0.72	±$0.02	$0.69-$0.74
West	$0.69	±$0.04	$0.65-$0.73

Figure 3.4: Food Cost Estimates, SY 1988-89



Note: The ranges account for the sampling errors associated with our estimates.

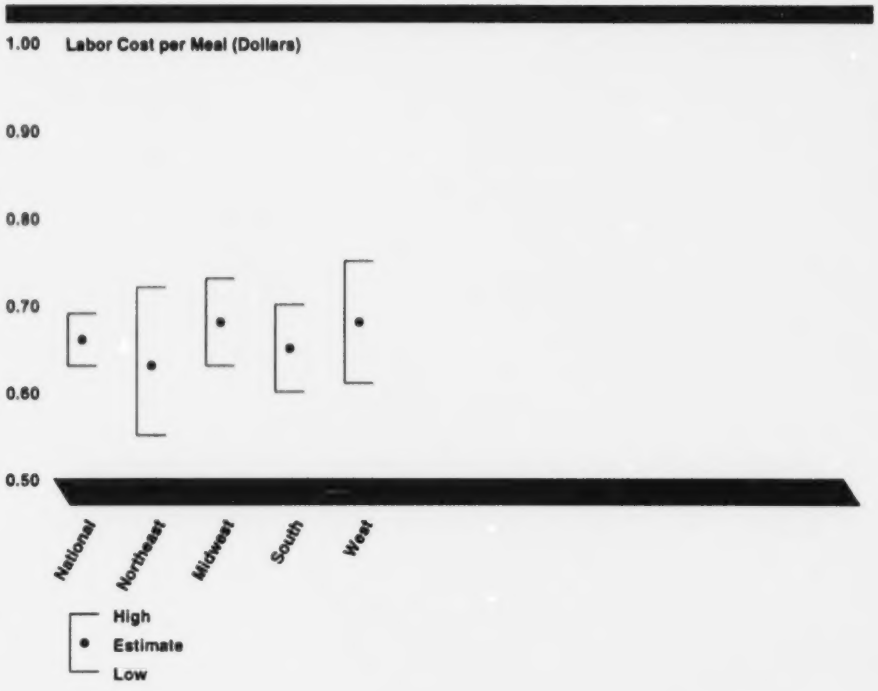
Table 3.4: Food Cost Estimates, SY 1988-89

	Average cost	Sampling error at 95-percent level	Confidence interval
National	$0.80	±$0.04	$0.76-$0.84
Northeast	$0.89	±$0.12	$0.76-$1.01
Midwest	$0.79	±$0.07	$0.72-$0.86
South	$0.76	±$0.04	$0.72-$0.80
West	$0.83	±$0.11	$0.72-$0.94

Variations in Labor Costs

We found more significant differences among regions' labor costs. Although we found no statistically significant differences in the data for SY 1987-88, we did find several significant differences among regions in the SY 1988-89 data. As shown in figure 3.6 and table 3.6, labor costs were higher in the Northeast and West than in the South and Midwest. While figure 3.6 shows overlapping confidence intervals, additional statistical testing indicated statistically significant differences.

Figure 3.5: Labor Cost Estimates, SY 1987-88

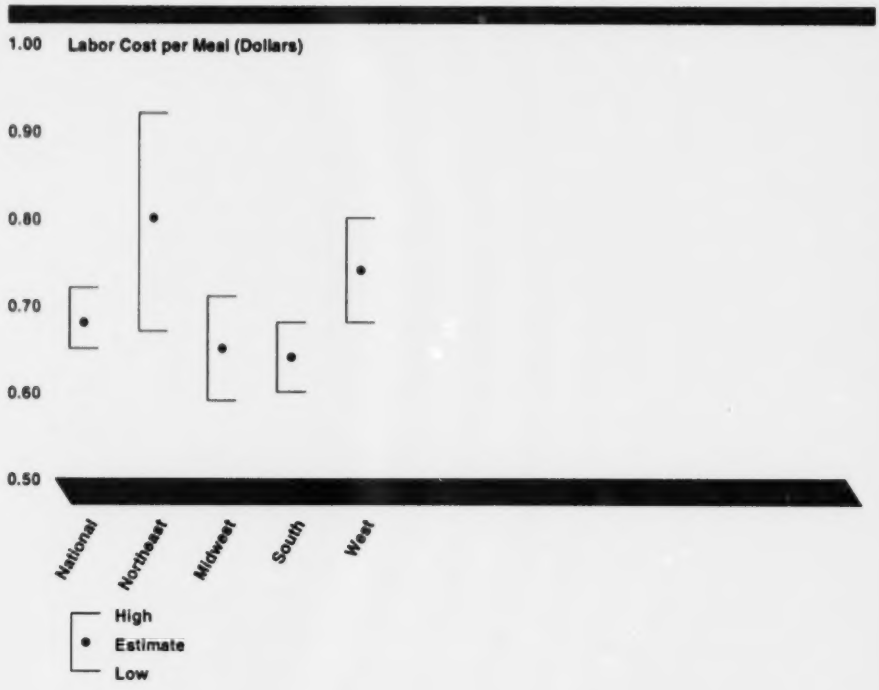


Note: The ranges account for the sampling errors associated with our estimates.

Table 3.5: Labor Cost Estimates, SY 1987-88

	Average cost	Sampling error at 95-percent level	Confidence interval
National	$0.66	±$0.03	$0.63-$0.69
Northeast	$0.63	±$0.08	$0.55-$0.72
Midwest	$0.68	±$0.05	$0.63-$0.73
South	$0.65	±$0.05	$0.60-$0.70
West	$0.68	±$0.07	$0.61-$0.75

Figure 3.6: Labor Cost Estimates, SY 1988-89



Note: The ranges account for the sampling errors associated with our estimates.

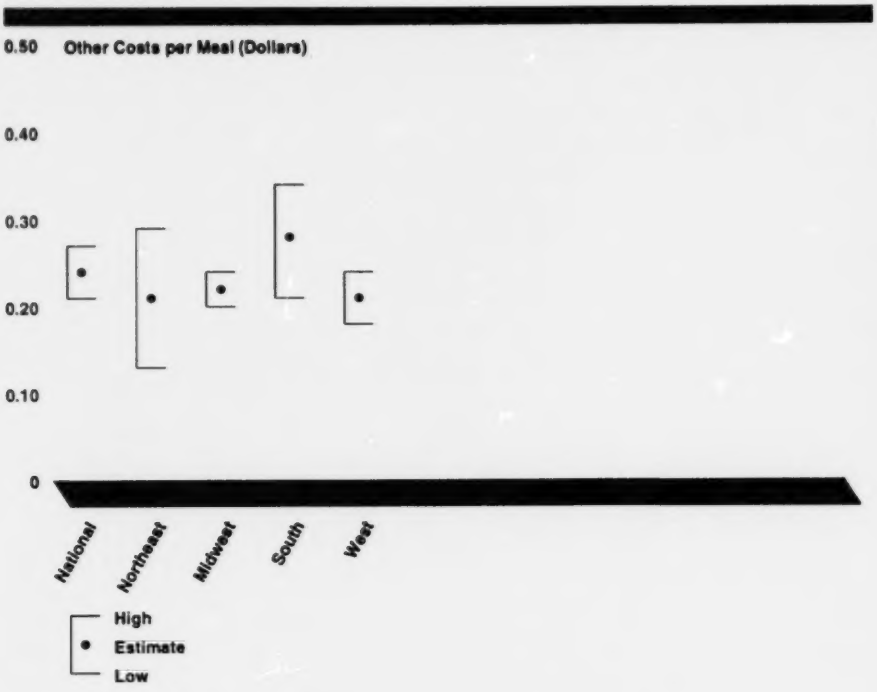
Table 3.6: Labor Cost Estimates, SY 1988-89

	Average cost	Sampling error at 95-percent level	Confidence interval
National	$0.68	±$0.04	$0.65-$0.72
Northeast	$0.80	±$0.13	$0.67-$0.92
Midwest	$0.65	±$0.06	$0.59-$0.71
South	$0.64	±$0.04	$0.60-$0.68
West	$0.74	±$0.06	$0.68-$0.80

Variations in Other Costs

As shown in figure 3.8 and table 3.8, "other costs" were higher in the West than in the Northeast and South in SY 1988-89.

Figure 3.7: Estimates of Other Costs, SY 1987-88

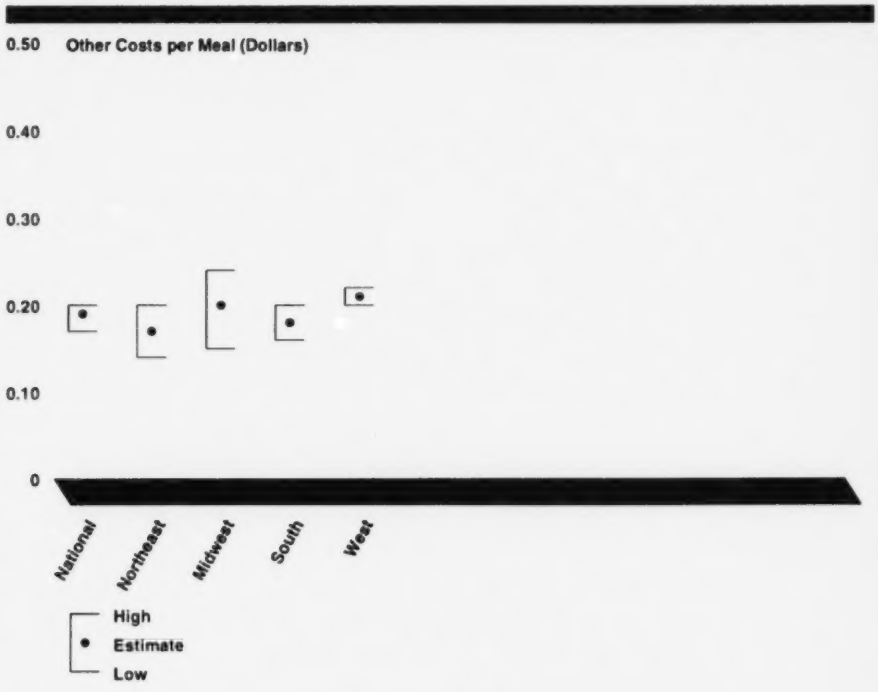


Note: The ranges account for the sampling errors associated with our estimates.

Table 3.7: Estimates of Other Costs, SY 1987-88

	Average cost	Sampling error at 95-percent level	Confidence interval
National	$0.24	±$0.03	$0.21-$0.27
Northeast	$0.21	±$0.08	$0.13-$0.29
Midwest	$0.22	±$0.02	$0.20-$0.24
South	$0.28	±$0.07	$0.21-$0.34
West	$0.21	±$0.03	$0.18-$0.24

Figure 3.8: Estimates of Other Costs, SY 1988-89



Note: The ranges account for the sampling errors associated with our estimates.

Table 3.8: Estimates of Other Costs, SY 1988-89

	Average cost	Sampling error at 95-percent level	Confidence interval
National	$0.19	±$0.02	$0.17-$0.21
Northeast	$0.17	±$0.03	$0.14-$0.20
Midwest	$0.20	±$0.05	$0.15-$0.24
South	$0.18	±$0.02	$0.16-$0.20
West	$0.21	±$0.01	$0.20-$0.22

The Index Used to Adjust the NSLP's Reimbursement Rates

The Food Away From Home Series of the Consumer Price Index (CPI), based on a sample of meals from restaurants and other vendors in urban locations across the country, appears to be a reasonable means to use when adjusting the reimbursement rates in the NSLP. The types of foods used in calculating the index seem comparable to the types of foods required to be offered under the NSLP. Furthermore, the Food Away From Home Series index tracks closely with other similar national price indexes.

The Food Away From Home Series of the Consumer Price Index

The Department of Labor's Bureau of Labor Statistics (BLS) measures, among other things, the changes in the retail price of a "market basket of goods"—in this case, food items purchased for consumption away from home. The Food Away From Home Series is developed by gathering monthly information on the sales and cost of food items eaten away from home. Separate information is collected on food items eaten at (1) breakfast, (2) lunch, and (3) dinner. Information is also collected on snacks and nonalcoholic beverages. Following are the foods (by meal category) for which BLS collects information:

Breakfast or Brunch

Main course
Meat
Vegetables
Fruit
Salad
Soup
Bread products
Pastry
Appetizer
Dessert
Other food(s)
Nonalcoholic beverage (including coffee, milk, etc.)

Lunch

Main course (meat, pizza, sandwich, etc.)
Vegetables
Salad
Soup
Bread products
Appetizer

Dessert
Other food(s)
Nonalcoholic beverage (including coffee, milk, etc.)

Dinner

Main course (meat, pizza, sandwich, etc.)
Vegetables
Salad
Soup
Bread products
Appetizer
Dessert
Other food(s)
Nonalcoholic beverage (including coffee, milk, etc.)

Snacks and nonalcoholic beverages

Candy, gum, crackers, pastries, chips, and similar items
Fruit
Ice cream products
Other snacks
Nonalcoholic beverages (including coffee, milk, etc.)

Extra charges for additional items served in conjunction with a main item and discounts offered by the restaurant or vendor are also considered in collecting information on costs. Various other expenses, like tipping and entertainment costs, are not included in the index.

Information is collected from the restaurants and other food establishments and ranked on the basis of sales. In other words, for each part of a meal, the item representing the largest proportion of sales is listed first, and so on. For example, if for the main course at dinner, the sales of pork exceed the sales of beef, then pork would be listed first in the category. After this ranking, BLS uses a sampling method—which allows any item to be selected but increases the probability that the top-selling items will be selected—to develop the price index.

BLS gathers information monthly in various locations throughout the nation to develop its index. In total, measurements are taken in five large metropolitan areas—New York, Los Angeles, Chicago, Philadelphia, and San Francisco—and 80 other locations with a population greater than

50,000. Each month, all five of the large metropolitan areas are surveyed. The remaining locations are split into two groups of 40 locations, and each month, the locations in one of the groups are surveyed. In other words, 40 locations are visited one month and the remaining 40 the following month. The five large metropolitan areas and the two groups of 40 locations each account for one-third of the index.

Appropriateness of the Food Away From Home Series Index to Adjust NSLP's Reimbursement Rates

The National School Lunch Act directs FNS to use the Food Away From Home Series to adjust the NSLP's reimbursement rates. Basically, FNS computes the 1-year percentage change in the index and adjusts the reimbursement rates to reflect that change. For example, if the Food Away From Home Series index were to increase by 2 percent, each reimbursement rate would be increased by 2 percent also.

The Food Away From Home Series index seems appropriate for adjusting reimbursement rates because the foods used in calculating it are similar to the foods that are to be offered students under the NSLP. Also, the index tracks closely with other price indexes that could be used to adjust the reimbursement rates.

Foods Offered Under the NSLP Are Similar to Those Found in the Food Away From Home Series

The NSLP's regulations require that school meals served under the program must meet certain requirements. The requirements specify foods that must be served and the quantity of each food depending on the age of the students. Larger portions are required for older children. According to the regulations, the following foods must be present in each meal:

- milk,
- meat or meat alternate (alternates include cheese, eggs, cooked dry beans or peas, and peanut butter),
- vegetable or fruit, and
- bread or bread alternate (alternates include cooked rice, macaroni, noodles, and other pasta products or cereal grains).

These types of foods required to be served under the NSLP are similar to those included in BLS' surveys for adjusting the Food Away From Home Series index. Also, since BLS' data are collected nationwide, the chances that the index would be biased to overrepresent costs in certain regions are reduced. Thus, the use of the index to adjust the NSLP's reimbursement rates, which apply nationwide, seems fair.

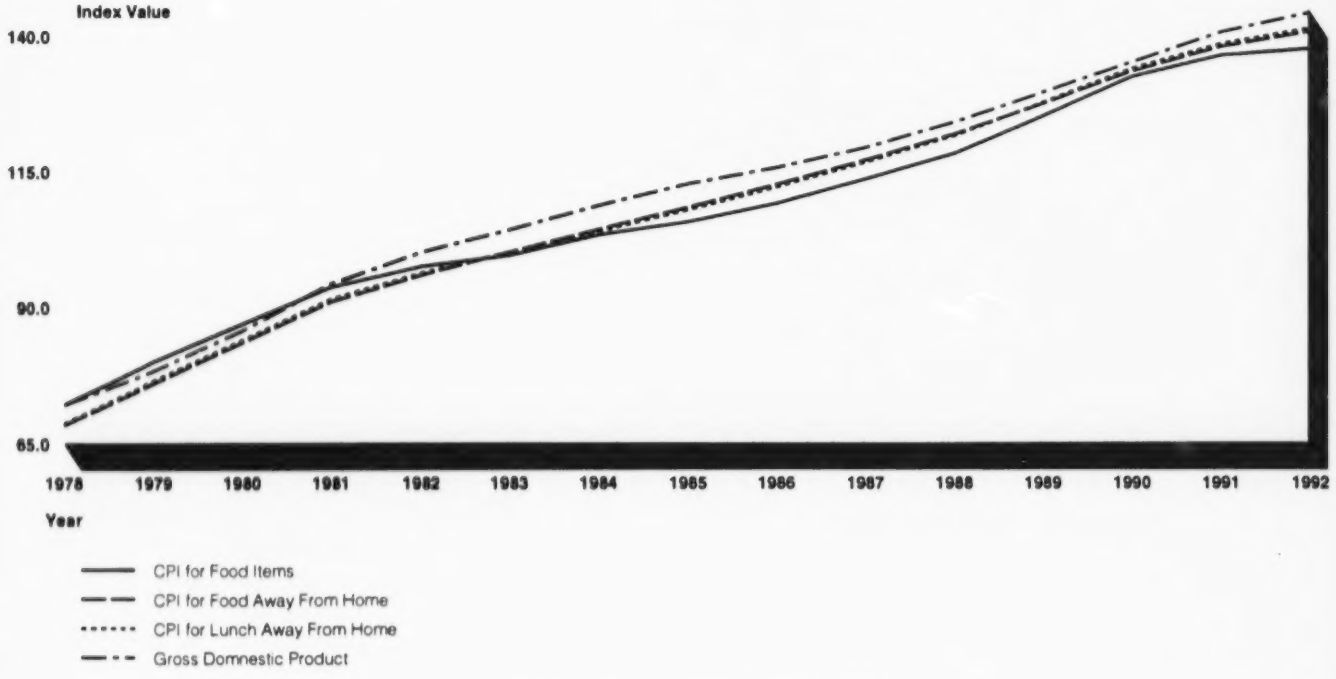
The Food Away From Home Series Is Similar to Other Indexes

In order to determine the effect of using the Food Away From Home Series to adjust the NSLP's reimbursement rates, as compared to using other price indexes, we examined four different price indexes:

- the CPI for Food Items,
- the CPI for Food Away From Home,
- the CPI for Lunch Away From Home, and
- the gross domestic product.

We found that all four indexes tracked closely together over the last 15 years. Figure 4.1, together with table 4.1, shows the changes in these four indexes for the last 15 years.

Figure 4.1: Comparison of Price Indexes, 1978-92



Note: All indexes have a value set at 100 in 1982-84.

Table 4.1: Comparison of Price Indexes, 1978-92

Year	CPI for Food Items	CPI for Food Away From Home	CPI for Lunch Away From Home	Gross domestic product
1978	72.0	68.3	68.5	72.0
1979	79.9	75.9	76.4	78.2
1980	86.8	83.4	83.8	85.6
1981	93.6	90.9	91.4	94.2
1982	97.4	95.8	96.2	100.0
1983	99.4	100.0	100.0	104.1
1984	103.2	104.2	103.8	108.6
1985	105.6	108.3	107.8	112.6
1986	109.0	112.5	112.0	115.6
1987	113.5	117.0	116.6	119.3
1988	118.2	121.8	121.5	124.0
1989	125.1	127.4	127.6	129.5
1990	132.4	133.4	133.9	135.1
1991	136.3	137.9	138.4	140.6
1992	137.5	140.7	141.3	144.2

Concerns About a Possible Limitation in the Food Away From Home Series

Some have raised the concern that the Food Away From Home Series may have a limitation as an index to adjust reimbursement rates for the NSLP—specifically, with regards to fluid milk: While fluid milk is included in the index data, the data may not reflect the relative importance that milk has as a part of a school lunch. Fluid milk could be considered separately when computing reimbursement rate adjustments. BLS officials stated that an adjustment factor based on the Producer Price Index for fluid milk could be added to the formula used by FNS. Adding a component for milk would capture the price changes of fluid milk. FNS would need to determine what percentage of the cost of a meal served for the NSLP is attributable to the cost of milk, and FNS could then add into the Food Away From Home Series index an adjustment factor reflecting that percentage.

According to FNS, BLS, and other experts, this limitation caused by the composition of the index is not significant. FNS officials told us that they question whether the benefits of developing a special index would be worth the time, effort, and additional cost.

The National School Lunch Program

The NSLP is one of the federal government's oldest and largest child nutrition programs. On an average school day, the program serves nearly 25 million lunches to children in over 93,000 schools and residential child care institutions nationwide. In fiscal year 1992, the federal government provided $3.8 billion in cash reimbursement and distributed over $755 million in commodities to schools participating in the program. For fiscal year 1993, the Congress appropriated $4.1 billion in cash and another $624 million to purchase commodities for distribution.

Background

The NSLP, authorized by the National School Lunch Act of 1946 (42 U.S.C. 1751, et seq.), is a federal child nutrition entitlement program administered by FNS. The program's goals are to safeguard the health and well-being of the nation's school-age children and to encourage the consumption of domestic agricultural commodities through noncommercial channels. Meals provided under the NSLP are available to all students enrolled in participating schools. Every meal served is supported by some federal funding, with the amount depending on a family's income: Children from a family that cannot afford school lunches can qualify for free meals. If the family can afford to bear a portion of the cost, the child is eligible for reduced-price lunches, for each of which the family pays no more than $0.40. The remaining children receive what are termed paid lunches. In fiscal year 1993, FNS reimbursed schools $1.84 for free lunches, $1.44 for lunches sold at a reduced price, and $0.30 for the remaining lunches that were served.[7] In addition to the entitlement reimbursement, schools also received $0.03 in bonus commodities for each meal served in 1993.

Under the program, FNS is responsible for setting annual reimbursement rates, making agricultural commodities available to those participating in the program, reimbursing state agencies for meals they served, providing training for SFAs, and overseeing the program. In order to participate in the program and qualify for federal reimbursement, schools must serve lunches that meet the program's requirements, and the schools must offer free or reduced-price meals to all eligible children.

Because the NSLP is an entitlement program, and because the program's costs are tied directly to reimbursement rates, the federal government's total spending on the program is determined largely by the total number of reimbursable meals served times the applicable rates.

[7]These rates include a cash value of $0.14 per meal in commodity assistance, to which SFAs are entitled.

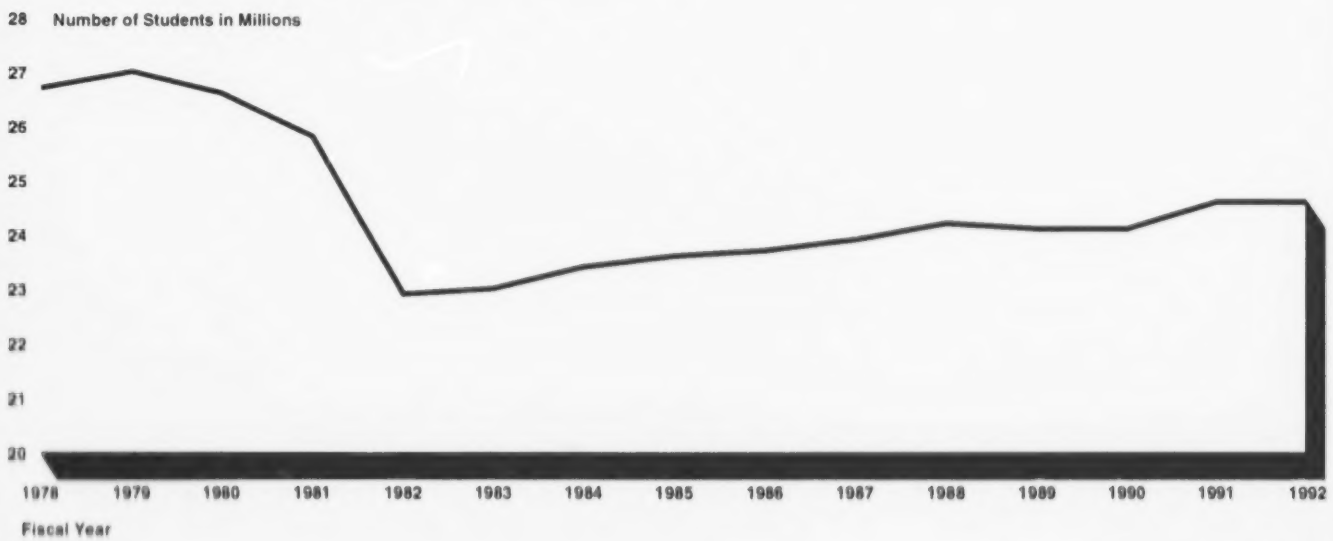
Trends for the NSLP

While participation in and funding for the program dropped in the early 1980s, there have been steady increases since that time.

Student Participation

Participation in the NSLP has varied over the past 15 years. For example, the average daily participation fell from a high of 27.0 million children in fiscal year 1979 to 22.9 million children in fiscal year 1982. In 1981, provisions of the Omnibus Budget Reconciliation Act reduced the federal reimbursement rate for some lunches and tightened income eligibility guidelines for free and reduced-price meals. These provisions drastically reduced participation in the program. But since 1982, the participation in the NSLP has grown steadily. In fiscal year 1992, the average daily participation was roughly 24.6 million children. Figure 5.1 shows the average daily participation for the last 15 years.

Figure 5.1: Average Daily Participation in the NSLP, 1978-92

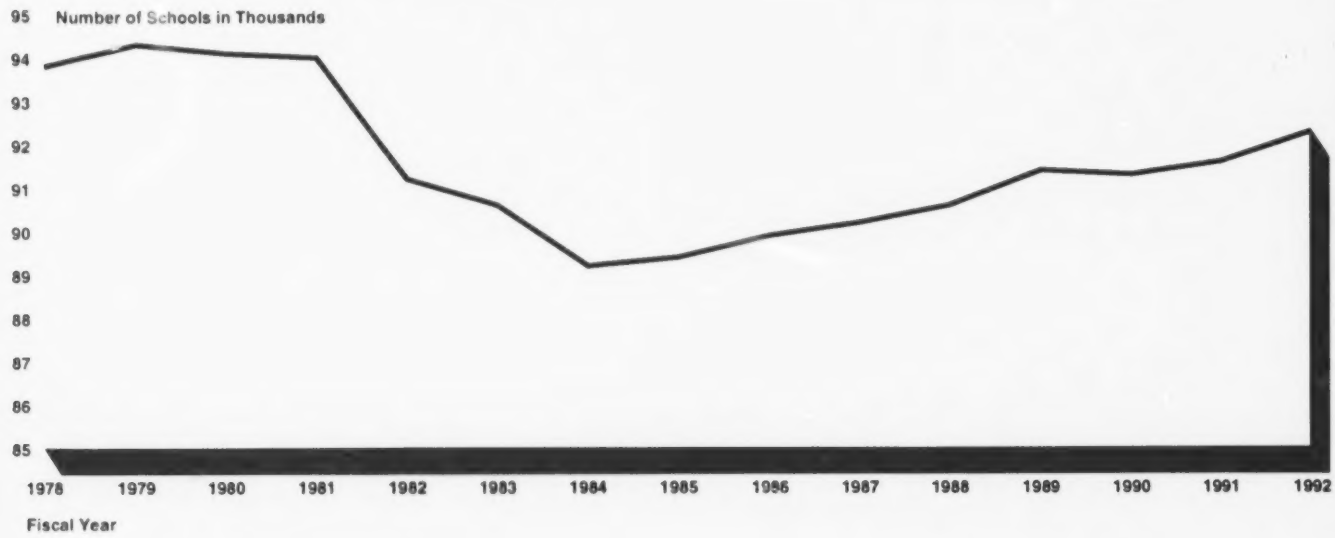


Participation by Schools

Like student participation, the number of schools participating in the program has also varied. The number fell from a high of 94,300 schools in fiscal year 1979 to a low of about 89,200 schools in fiscal year 1984. Since that time, the number of schools participating in the program has grown

steadily. Currently, there are slightly more than 93,000 schools participating in the program. Figure 5.2 shows the number of schools participating in the program for the past 15 years.

Figure 5.2: Schools Participating in the NSLP, 1978-92

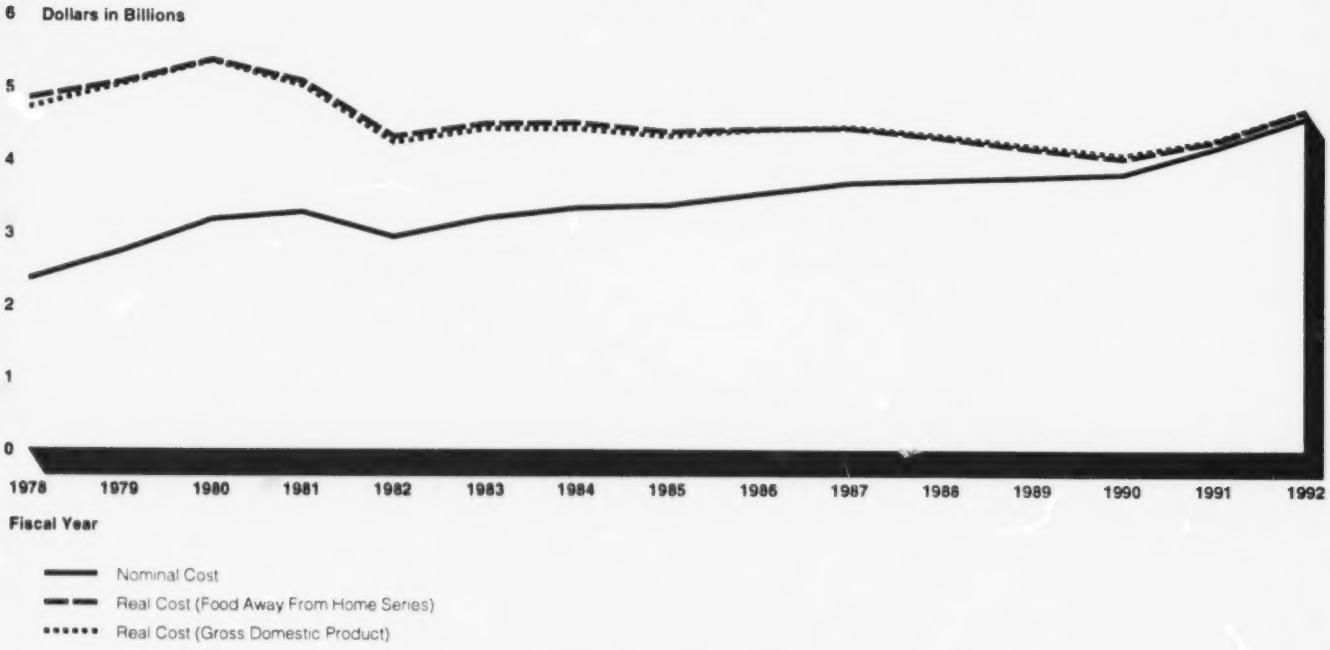


NSLP's Cost

The NSLP's nominal cost has doubled in the last 15 years. In fiscal year 1978, the total cost was about $2.35 billion, but by fiscal year 1993, funding was about $4.7 billion. This represents an increase of about 100 percent.

To examine the real cost of the NSLP, we adjusted the program's actual cost to account for inflation using two price indexes—the Food Away From Home Series index and the gross domestic product index. When adjusted for inflation, the fiscal year 1992 nominal cost of about $4.7 billion is roughly the same as the fiscal year 1978 nominal cost of about $2.35 billion. Thus, while the NSLP's cost has increased in nominal terms, the increase basically reflects inflation. Figure 5.3 and table 5.1 show the NSLP's cost for the last 15 years.

Figure 5.3: NSLP's Cost, 1978-92



Note: Real costs are presented in 1992 dollars.

Table 5.1: NSLP's Cost

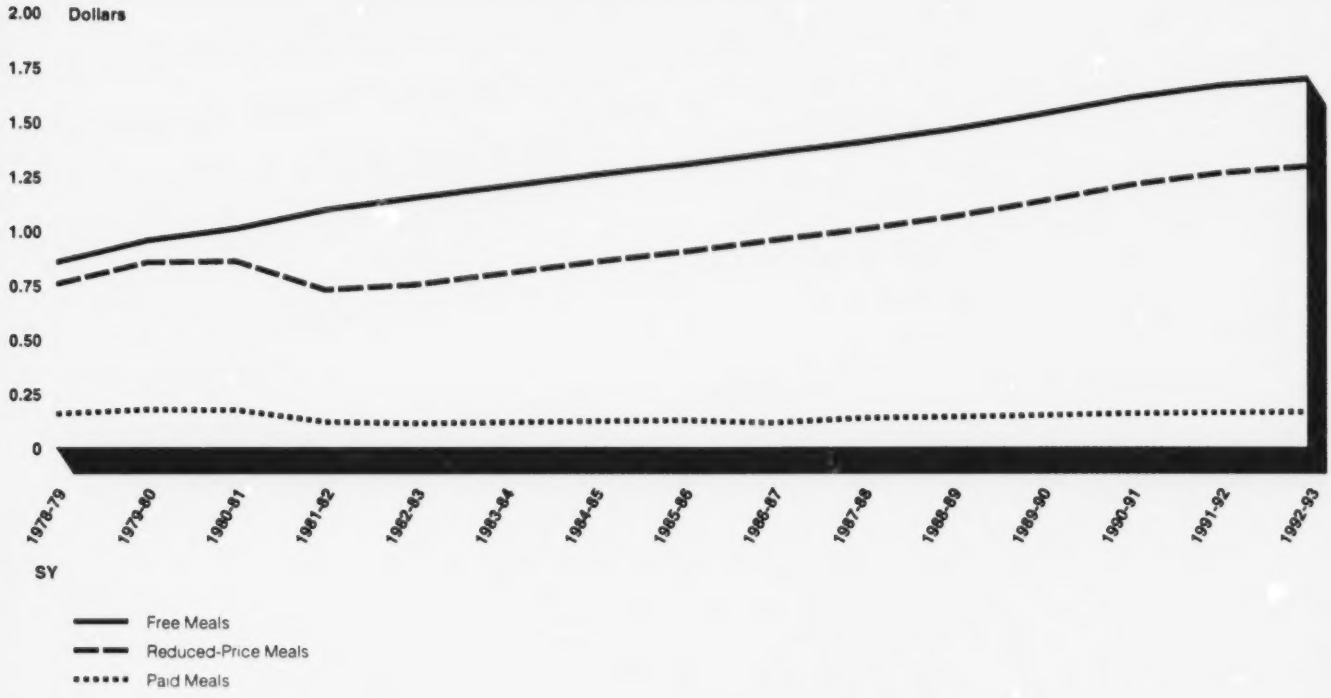
Dollars in billions

Year	Nominal cost	Real cost—Food Away From Home Series index (1992 dollars)	Real cost—gross domestic product index (1992 dollars)
1978	$2.35	$4.84	$4.71
1979	$2.73	$5.06	$5.03
1980	$3.18	$5.37	$5.36
1981	$3.28	$5.08	$5.02
1982	$2.94	$4.32	$4.24
1983	$3.20	$4.50	$4.43
1984	$3.34	$4.51	$4.43
1985	$3.38	$4.39	$4.33
1986	$3.54	$4.43	$4.42
1987	$3.69	$4.44	$4.46
1988	$3.73	$4.31	$4.34
1989	$3.77	$4.16	$4.20
1990	$3.82	$4.03	$4.08
1991	$4.18	$4.27	$4.29
1992	$4.70	$4.70	$4.70

Reimbursement Rates

The nominal reimbursement rates for free and reduced-price meals have generally increased over the past 15 years. The cash reimbursement rate (excluding reimbursement in the form of commodities) for free meals has risen from $0.53 in SY 1972-73 to $1.70 in SY 1992-93, and the rate for reduced-price meals has risen from $0.43 to $1.30 over the same period. The reimbursement rate for the paid meals served has remained comparatively stable, ranging from a high of roughly $0.17 in SY 1978-79 to a low of $0.11 in SY 1981-82. Currently, schools receive $0.16 for paid meals. Also, for each meal served, regardless of its type, schools received 14 cents' worth of entitlement commodities in 1993, which, as mentioned earlier, were supplemented by 3 cents' worth of bonus commodities. As described previously, reimbursement rates are adjusted annually using the Food Away From Home Series of the CPI, published by BLS, unless otherwise affected by congressional policy decisions. For example, the Omnibus Budget Reconciliation Act of 1981 had the one-time effect of reducing the reimbursement rates for reduced-price and paid lunches. Figure 5.4 shows the program's nominal reimbursement rates for the last 15 years.

Figure 5.4: NSLP's Nominal Reimbursement Rates, SY 1978-79 to 1992-93



While the reimbursement rates have gradually risen since 1981, our analysis of the rates in constant 1992 dollars, as shown in table 5.2, indicates that the rates for free and paid meals have stayed relatively constant. Since 1981, the reimbursement rate for reduced-price meals, however, has gradually increased in comparison to the other rates. This is because the difference between the rates for free and reduced-price meals has remained at $0.40 per meal over this period. However, adjusting the difference in the two rates in 1992 to reflect the value of $0.40 in 1981 results in a larger gap between the two rates in the earlier years. In other words, $0.40 was worth more in 1981 than in 1992.

Table 5.2: NSLP's Reimbursement Rates (1992 Dollars)

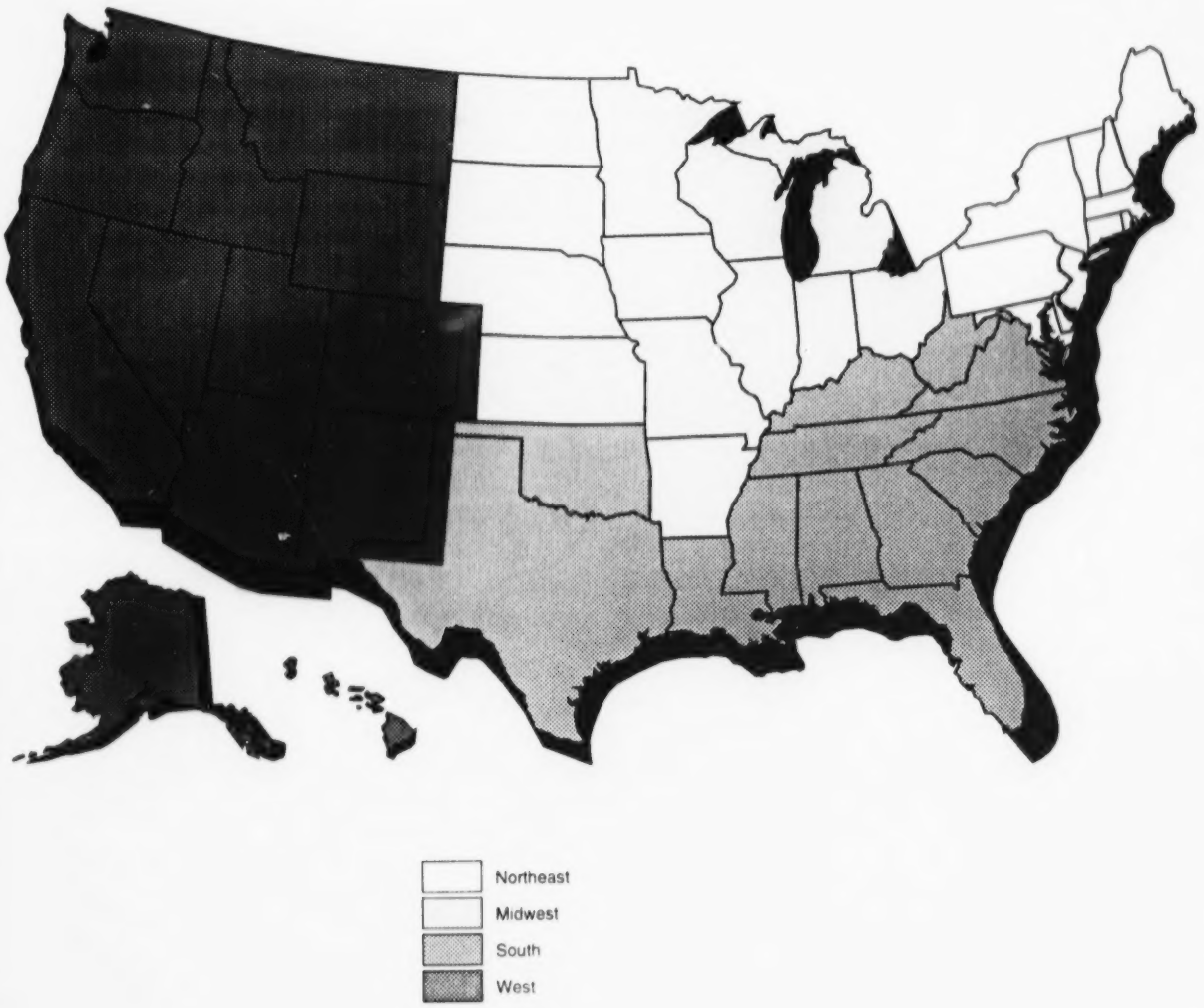
	Rates calculated using the Food Away From Home Series Index			Rates calculated using the gross domestic product index		
Year	Free meals	Reduced-price meals	Paid meals	Free meals	Reduced-price meals	Paid meals
1978	$1.76	$1.55	$0.32	$1.71	$1.51	$0.31
1979	$1.77	$1.58	$0.32	$1.76	$1.57	$0.32
1980	$1.70	$1.44	$0.29	$1.70	$1.45	$0.29
1981	$1.69	$1.12	$0.18	$1.67	$1.11	$0.18
1982	$1.69	$1.10	$0.16	$1.66	$1.08	$0.16
1983	$1.69	$1.23	$0.16	$1.66	$1.11	$0.16
1984	$1.70	$1.15	$0.16	$1.67	$1.34	$0.16
1985	$1.69	$1.17	$0.15	$1.67	$1.16	$0.15
1986	$1.70	$1.19	$0.14	$1.69	$1.19	$0.14
1987	$1.69	$1.21	$0.16	$1.70	$1.22	$0.16
1988	$1.69	$1.23	$0.16	$1.70	$1.24	$0.16
1989	$1.69	$1.25	$0.15	$1.70	$1.26	$0.15
1990	$1.70	$1.27	$0.16	$1.72	$1.29	$0.17
1991	$1.70	$1.29	$0.16	$1.71	$1.29	$0.17
1992	$1.70	$1.30	$0.16	$1.70	$1.30	$0.16

Note: Table does not include the value of entitlement and bonus commodities.

Objectives, Scope, and Methodology

In preparation for reauthorization hearings, the Chairman, Ranking Minority Member of the House Committee on Education and Labor and the Chairman of the Committee's Subcommittee on Elementary, Secondary, and Vocational Education asked us to review two reports by FNS to provide detailed information on school lunch costs. We (1) reviewed FNS' reports, (2) estimated the percentage of SFAs that produced meals at or below the reimbursement rate for free meals, (3) examined differences in meal production costs among regions, and (4) examined the appropriateness of the index FNS uses to adjust reimbursement rates. Figure 6.1 shows the four U.S. Bureau of the Census regions we used for our regional analysis—the Northeast, Midwest, South, and West.

Figure 6.1: U.S. Census Bureau Regions



To provide information on school meal costs, we analyzed data from FNS' two reports.[8] These two reports—performed under contract with a private research firm—were designed to be part of a 3-year research study to (1) provide basic descriptive information, (2) provide administrative information for revising the NSLP's regulations and reporting requirements, and (3) identify needed training and technical assistance. The two reports, published in August 1991 and January 1992, examined meal production costs for SY 1987-88 and 1988-89, respectively, and represented the most current nationwide information available at the time of our review. FNS' study did not address how meal costs might vary in different parts of the country.

Contractor's Sample Design

The contractor's sample design was a stratified two-stage cluster sample using probability-proportional-to-size (PPS) sampling. First, 20 large metropolitan areas of the country were selected using the 1980 census. The remaining areas were stratified into 30 strata consisting of groupings called primary sampling units (PSU) that consisted of (1) a metropolitan statistical area, (2) a single county, or (3) a group of contiguous counties. Two PSUs from each of the 30 strata were randomly selected using PPS sampling. Overall, a total of 80 geographic areas or PSUs were selected in the first stage.

The second sampling stage involved the selection of individual SFAs. A frame of SFAs was constructed by contacting each state to determine the number of SFAs in each area previously selected. Each frame was divided into four strata representing public and private SFAs and SFAs in areas with high poverty and areas with low poverty. Within each stratum, some SFAs were selected with certainty, and others were selected with probability proportional to the number of students eligible for the NSLP in the SFAs. A total of 1,740 SFAs were randomly selected—112 with certainty and 1,628 with proportional sampling. Because some SFAs did not respond and some provided incomplete or inaccurate responses, useful information was obtained on 896 SFAs in SY 1987-88 and 1,179 in SY 1988-89, from 31 states and the District of Columbia. A detailed discussion of the contractor's sampling methodology can be found in the two reports by FNS.

The contractor conducted telephone interviews and mailed surveys to the managers of each SFA selected for the sample. Managers were asked to provide information on, among other things, the costs that their operation had incurred to produce meals for SY 1987-88 and 1988-89.

[8]A citation appears in an earlier note. A third-year report did not contain information on meal costs.

FNS' study analyzed the reported meal costs for all meals served rather than the actual costs of just the meals served under the NSLP. SFAs typically do not produce meals exclusively for the NSLP but also produce meals for adults, a la carte meals, and meals for other programs. Therefore, all costs for SFAs are not incurred producing meals for the NSLP. It was, therefore, necessary for the contractor to develop a method for estimating costs for the NSLP. The contractor developed a complex model to estimate for each SFA a "lunch equivalent cost" that represented the cost to the NSLP. In other words, the meal costs presented by the contractor are estimates of the costs incurred to produce meals for the NSLP, not the actual costs incurred.

Finally, the contractor used a complex analytical methodology that incorporated several weights and adjustments to compute results. For example, the responses were adjusted to account for nonresponse on the basis of the number of approved applicants. Similarly, the responses were adjusted on the basis of the total number of lunches served. Each SFA was also weighted by the reciprocal of its two-stage selection probability. We used the contractor's methodology to compute the estimates and sampling errors in this briefing report.

GAO's Methodology

Before performing our analysis, we reviewed the contractor's data collection and reliability measures and reviewed the methodology used. We reconstructed the contractor's estimates and computed the sampling errors associated with the estimates. We are reasonably confident that the contractor's analysis was appropriate to determine national average costs for meals. We computed all of the sampling errors at the 95-percent confidence level.

To provide estimates of the meal costs for the four Census Bureau regions—the Northeast, Midwest, South, and West—for the 2 years, we used the contractor's data, which, as described, was obtained from a probability sample of SFA officials. Since the sample design was complex, we also used the contractor's methodology to compute our estimates of regions' costs and the associated sampling errors.

To determine the statistical significance of differences between regions, we performed 2-tailed t-tests for selected variables at the 95 percent level. Rather than assuming a simple random sample of SFAs, we adjusted the t-statistics to reflect the complex sample design. For each test, the t-value was based on the region about which there was less information (i.e.,

fewer degrees of freedom). The statistician who developed the contractor's methodology confirmed that this is a conservative approach.

To determine the ability of SFAs to produce meals at or below the reimbursement rate for free meals, we compared the reimbursement paid by FNS and our regional cost estimates for SY 1987-88 and 1988-89. For each region, we determined the percentage of SFAs that reported meal production costs that exceeded the national reimbursement rate. We also computed the percentage of SFAs whose reported meal costs exceeded our estimate of the total reimbursement from all available sources.

To estimate differences in meal production costs among regions, we compared each region's average costs to those of other regions for both years. We also examined the factors that make up the cost of a meal—namely, food, labor, and other costs—to identify which factors had the greatest impact on the total cost. "Other costs" are all those related to providing meals but not considered food or labor costs, such as the costs of tableware items, food transportation and storage, food preparation equipment, utilities, and maintenance of the food preparation and service area.

Finally, we reviewed the Food Away From Home Series of the CPI to assess the appropriateness of using this index to annually adjust the reimbursement rates for the NSLP. In assessing the index, we (1) determined how it is constructed, (2) examined the foods included in calculating it, (3) compared the foods included with those offered in lunches for the NSLP, and (4) compared changes in the index to changes in three other indexes.

To sum up, several factors are important in understanding our estimates. FNS' data were (1) collected using a sophisticated sampling technique, (2) collected from a sample of SFAs designed to be nationally representative (rather than regionally), (3) obtained through telephone interviews and questionnaires rather than on-site observation, (4) estimated from the total expenditures for all meals rather than being strictly the production costs for just those meals served under the NSLP, and (5) adjusted using several weighting and modeling techniques. While we judged FNS' methodology to be reasonable, the results are estimates that may not precisely reflect actual costs. Since we relied on FNS' data, the same is true for our results. Furthermore, since FNS' sampling was designed to provide national rather than regional estimates, our estimates for regions generally are accompanied by larger sampling errors. Finally,

at this point in time, the data are several years old. While we recognized these limitations in FNS' data, these data nevertheless were the most recent and comprehensive available for our review.

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